

REMARKS

In the Office Action, the Examiner rejected claims 1, 3 and 5 – 9 as obvious over Bowman et al. in view of Shinada, rejected claims 1 – 3, 5, 6 and 9 – 16 as obvious over Farrington et al. in view of Shinada, and rejected claims 7 and 8 as obvious over Farrington et al. in view of Bowman et al.

35 U.S.C. §103(a)

As previously discussed, the **Bowman** reference suggests that the use of a separate drive winding is required, and the winding should not be eliminated. The present invention does not require this drive winding. Further, the Examiner acknowledges that the Bowman reference does not disclose first and second damping resistors connected to the control leads of the first and second clamping transistors.

In the **Shinada** reference is disclosed that an impedance circuit, consisting of a resistor, a capacitor/resistor combination, a resistor/diode combination, or nothing, may be placed in series with the main transistor gate.

The present invention, by contrast, is not directed to any of these impedance networks. Rather, a resistor is placed in series with the gate of the control transistor, whereby the transistor provides the damping qualities of the circuit, providing an active element as the dampener, as opposed to any of the passive circuits suggested by Shinada.

The paragraph identified by the Examiner in the **Shinada** reference discusses control of the gate current to suppress ringing. The reference does not state whether this refers to the gate circuit or drain circuit but since gate current is specifically mentioned, it is assumed that it is to damping ringing in the gate circuit.

In the present application is provided damping of secondary drain ringing. This is not the same as the damping in Shinada, and it is accomplished with an active network in the gate of the power synchronous rectifier. The resistor is in series with the control device, not the power device. The circuit of the present invention is thus not suggested in the reference.

5 Further, the **Shinada** reference suggests that the aforementioned passive impedance circuits be used in what is known in the field as an Active Clamp circuit for transformer reset, where the Active Clamp: a) resets the transformer, and b) provides a rectangular signal to the secondary circuits for conversion.

10 The present invention does not require the Active Clamp. Instead, the present invention allows for a resonant reset clamp, among other methods, of providing for transformer reset, as well as not requiring a rectangular signal to the secondary circuits for conversion. Nowhere in the prior art are these points suggested.

15 In view of the aforementioned differences, Applicants submit that the invention is not obvious over even the combination of references and asserts that the invention is patentable thereover.

As previously discussed, the operation of **Farrington** is completely different than the present invention. The control transistors in Farrington are used in a sample-and-hold fashion, as opposed to the clamping fashion in the present invention. This is evidenced by the inverted polarity of the control transistors in Farrington, and the normal polarity of the control
20 transistors in the present invention.

As noted above, the passive impedance presented by **Shinada** is substantially different than the active clamping presented in the present invention.

Since both Farrington and Shinada have substantially different operation, these references whether considered individually or in combination would not have suggested the invention to the person of ordinary skill in the art.


In regards to **Farrington** as aforementioned, Applicant submits that the operation of the circuit disclosed in the reference is completely different from that of the present invention. Further, in regards to **Bowman** as aforementioned, the Bowman reference suggests that the use of a drive winding is necessary and should not be abandoned. In light of these differences, Applicants submit that the combination of Farrington in light of Bowman would not make obvious to the circuit of the present invention.

The present invention as claimed is thus not shown or suggested in the prior art, and therefore is a non-obvious improvement thereover.

Conclusion

Each issue raised in the action has been addressed. Early favorable reconsideration and allowance is hereby requested.

Respectfully submitted,



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